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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/584,005	08/15/2006	Peter Marten Van Der Horst	ACM3029PIUS	8565
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AKZO NOBEL INC. LEGAL & IP 120 WHITE PLAINS ROAD, SUITE 300 TARRYTOWN, NY 10591			EXAMINER CORDRAY, DENNIS R	
			ART UNIT 1741	PAPER NUMBER
			NOTIFICATION DATE 10/21/2010	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/584,005	Applicant(s) VAN DER HORST, PETER MARTEN	
	Examiner DENNIS CORDRAY	Art Unit 1741	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 August 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5,8,9 and 12-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5,8,9 and 12-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>8/12/2010</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 8/19/2010 have been fully considered but they are not persuasive.

Regarding the combination of Matsuda et al and Hosokawa et al, applicant argues (pp 6-7) that Matsuda et al fails to disclose or suggest that cellulose derivatives are included in the paper substrate or in the base paper sheet. Note that Claims 1, 2, 5, 8 and 9 do not require the cellulose derivatives to be in the paper substrate or in the base paper sheet, but recite either a paper or a paper coating comprising a cellulose ether. Applicant further argues that there is no reason why one of ordinary skill in the art would have included the claimed cellulose ether in the coating of Matsuda et al.

In response to applicant's argument that there is no teaching, suggestion, or motivation to combine the references, the examiner recognizes that obviousness may be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988), *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992), and *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398, 82 USPQ2d 1385 (2007).

In this case, Matsuda et al discloses a paper coating comprising a carboxymethyl cellulose (CMC) binder (adhesive). As applicant argues, Matsuda et al provides little guidance on the nature of the CMC used as a binder, so one of ordinary skill in the art

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would have turned to other sources, such as Hosokawa et al, for the nature of CMC that can be used as the binder. Hosokawa et al discloses that CMC having cationic and anionic degrees of substitution (DS) overlaying the claimed cellulose ether is used as a coagulating agent (reads on retention aid), a flocculating agent (reads on retention aid), a fixing agent (reads on retention aid), a dispersion stabilizer, a yield improver (reads on retention aid) for papermaking, as a sizing agent and as an adhesive (reads on binder) (pars 1 and 38). Binder and adhesive are synonymous terms as pertains to coatings (see Smook, "Handbook of Pulp and Paper Technology", p 264). One of ordinary skill in the art would have been able to determine and use the CMC of Hosokawa et al having adhesive properties as the binder in the coating of Matsuda et al and have a reasonable expectation of success in obtaining a suitable coating.

Regarding the combination of Matsuda et al and Hosokawa et al with Ferguson et al (pp 8-9), applicant recognizes that Ferguson et al was only used to teach a typical papermaking process that was generally known to those of ordinary skill in the art, not to teach retention aids or binders. Matsuda et al (col 4, lines 25-26) and Ferguson et al (col 1, lines 8-18) teach addition of retention aids to a paper substrate. Ferguson et al further teaches that adding retention aids and fillers to a papermaking stock is part of a typical papermaking process. The use of hydroxyethyl cellulose in an example in Ferguson et al is not a teaching against the claimed invention, because it is not part of a typical papermaking process for which the reference was relied upon.

Matsuda et al provides little guidance on materials that are suitable for retention aids, so one of ordinary skill in the art would have turned to other sources, such as

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Hosokawa et al. As discussed above, Hosokawa et al teaches that CMC having cationic and anionic degrees of substitution (DS) overlaying the claimed cellulose ether is used as a coagulating agent (reads on retention aid), a flocculating agent (reads on retention aid), a fixing agent (reads on retention aid) and a yield improver (reads on retention aid) for papermaking. One of ordinary skill in the art would have been able to determine and use the CMC of Hosokawa et al as a retention aid in the paper of Matsuda et al by adding it to the papermaking stock as a typical papermaking step taught by Ferguson et al and have a reasonable expectation of success in retaining fillers in the paper.

Regarding the combination of Agnemo et al and Hosokawa et al, applicant's arguments are similar and a similar response is given. Agnemo et al discloses adding retention aids to papermaking stock, surface sizing the paper and applying a coating comprising carboxymethyl cellulose. Smook provides evidence of what was known to those of ordinary skill in the art, that typical components of coatings include adhesives, cellulose derivatives as thickeners, and dispersants. Hosokawa et al discloses that CMC having a cationic and anionic DS overlaying the claimed cellulose ether is used in all of the above applications, thus provides a reasonable expectation of success in using the claimed material for any of the disclosed purposes. One of ordinary skill in the art would thus have found it obvious to use the claimed cellulose ether as any of the disclosed additives to the stock, sizing or coating and have a reasonable expectation in retaining fillers in the paper, of obtaining a sized paper, and/or of obtaining a suitable coating for paper.

The outstanding rejections are maintained.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 2, 5, 8, 9 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda et al (US 5616409) in view of Hosokawa et al (JP 2002-201202 A – a machine translation provided by the Applicant is used herein) and as evidenced by Watanabe et al (US 5989391).

Matsuda et al discloses an ink jet recording medium comprising a paper substrate having a basis weight from 50 to 100 g/m² and containing from 5 to 30 percent by weight of a filler and retention aids (Abs; col 1, lines 6-10; col 2, lines 25-32; col 3, lines 33-35 and 60-64; col 4, lines 9-18 and 25-27).

Matsuda et al discloses that the paper comprises a coating in an amount of 2 to 10 g/m² on at least one surface, the coating comprising a white pigment and a binder such as a carboxymethyl cellulose (col 4, lines 28-33; col 5, lines 10-15).

Matsuda et al does not disclose the claimed cellulose ether.

JP 2002-201202 discloses CMC having a DS of carboxymethyl groups (anionic) from 0.4 to 2.0, preferably from 0.6 to 1.8, and a DS of cationic groups of 0.1 to 1.0, and an overall ratio of cationic DS to anionic DS from 0.01 to 0.5, thus resulting in a net anionic charge that overlays the claimed range (pars 1, 11, 15, 19, 20 and 23-26). The CMC is used as a coagulating agent (reads on retention aid), a flocculating agent (reads

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on retention aid), a fixing agent (reads on retention aid), a dispersion stabilizer, a yield improver (reads on retention aid) for papermaking, as a sizing agent and as an adhesive (pars 1 and 38). Paper comprising the disclosed CMC and having improved tensile strength and Stockigt sizing degree is disclosed (pars 35-37). The CMC is cationized by reacting the uncationized CMC with 3-chloro-2-hydroxypropyl trimethyl ammonium chloride, which results in the claimed quaternary ammonium groups (pars 24-26).

The disclosed CMC has a structure substantially identical to that claimed and will have the claimed water solubility because, where the claimed and prior art apparatus or product are identical or substantially identical in structure or composition, a *prima facie* case of either anticipation or obviousness has been established. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). In other words, when the structure recited in the reference is substantially identical to that of the claims, the claimed properties or functions are presumed to be inherent. Alternatively, the degree of water solubility is not defined in the Specification and is only briefly discussed on p 5, lines 3-5 with respect to improving the water solubility. One of ordinary skill in the art would expect at least some water solubility in the disclosed CMC due to the ionic groups thereon.

The art of Matsuda et al, Hosokawa et al and the instant invention is analogous as pertaining to papers comprising fillers and retention aids. Absent convincing evidence commensurate in scope with the claims, it would have been obvious to one of ordinary skill in the art to use the claimed cellulose ether as a retention aid in the paper

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of Matsuda et al in view of Hosokawa et al as a functionally equivalent option and to have a reasonable expectation of success. It would also have been obvious to use the claimed cellulose ether as the disclosed carboxymethyl cellulose binder in the coating.

Claims 12, 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuda et al in view of Hosokawa et al and further in view of Ferguson et al (US 4808633).

The disclosures of Matsuda et al and Hosokawa et al are used as above. Matsuda et al and Hosokawa et al do not disclose the claimed papermaking steps.

Ferguson et al discloses that paper is typically made by adding materials such as retention aids and fillers to an aqueous papermaking stock, draining water from the stock and drying the stock (col 1, lines 8-18).

The art of Matsuda et al, Hosokawa et al, Ferguson et al and the instant invention is analogous as pertaining to making paper comprising fillers and retention aids. It would have been obvious to one of ordinary skill in the art to use the claimed steps to make the paper of Matsuda et al in view of Hosokawa et al and further in view of Ferguson et al as a typical papermaking process.

Claims 1, 2, 5, 8, 9 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Agnemo (US 5368689) in view of Hosokawa et al and as evidenced by Smook (Handbook for Pulp and Paper Technologists), if needed.

Agnemo discloses a paper comprising retention aids, fillers, a particular acid and a reduction agent (Abs, col 2, lines 33-58). In some embodiments, the paper is supercalendered paper having a filler content of about 20-30% by weight of the dry paper (col 3, line 66 to col 4, line 3). In other embodiments, the paper is a fine paper comprising 5-30% filler by weight of the dry paper and an outermost layer comprising a surface size (reads on a paper coating) or a coating layer (col 4, lines 10-28). The paper is made by adding the retention aids, fillers to an aqueous papermaking stock, dewatering the stock and drying the stock (col 5, lines 15-30; col 6, lines 11-14).

Agnemo does not disclose the claimed cellulose ether.

The disclosure of Hosokawa et al is used as above.

The art of Agnemo, Hosokawa et al and the instant invention is analogous as pertaining to papers comprising fillers and retention aids. Absent convincing evidence commensurate in scope with the claims, it would have been obvious to one of ordinary skill in the art to use the claimed cellulose ether as a retention aid in the paper of Agnemo in view of Hosokawa et al as a functionally equivalent option and to have a reasonable expectation of success. It would also have been obvious to use the claimed cellulose ether as the disclosed surface size or coating.

Alternatively, a coating composition is described for coated papers that comprises pigments, a binder such as carboxymethyl cellulose, etc. (col 3, lines 49-65). Common components of paper coatings as known in the art include adhesives, thickeners (including cellulose derivatives) and dispersants (for evidence, see Smook, p 288, Table 18-3). The uses of the carboxymethyl cellulose of JP 2002-201202 include

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the functions of the aforementioned components. It would have been obvious to one of ordinary skill in the art to use a coating having pigments, binder and other common components for the coating of the fine paper and to use the claimed cellulose ether as the disclosed carboxymethyl cellulose binder or as an adhesive, thickener or dispersant in the coating.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 2 and 14 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-8, 15 and 16 of copending Application No. 11/149613 in view of Stober et al. Although the conflicting claims are not identical, they are not patentably distinct from each other because the

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compending claims embody paper containing a filler and CMC having the claimed content of quaternary ammonium groups. The claimed quaternary ammonium groups would have been obvious to one of ordinary skill in the art over the disclosure of Stober et al. The claimed DS of carboxymethyl groups would have been obvious as typical in the art.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DENNIS CORDRAY whose telephone number is (571)272-8244. The examiner can normally be reached on M - F, 7:30 -4:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Daniels can be reached on 571-272-2450. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dennis Cordray/
Examiner, Art Unit 1741

/Eric Hug/
Primary Examiner, Art Unit 1741